Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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| In the Matter of | ) | |
| | ) | |
| Amendment of Part 101 of the Commission's | ) | WT Docket 10-153 |
| Rules to Facilitate the Use of Microwave for | ) | |
| Wireless Backhaul and Other Uses and to Provide | ) | |
| Additional Flexibility to Broadcast Auxiliary | ) | |
| Services and Operational Fixed Microwave | ) | |
| Licensees | ) | |

To: The Commission

## Comments of EIBASS

Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its comments in the above-captioned Second Further Notice of Proposed Rulemaking and Second Notice of Inquiry (Second FNPRM/NOI) relating to flexibility for Part 74 TV Broadcast Auxiliary Services (BAS) stations, and other issues.

## I. EIBASS Supports Category B2 Antennas at 13 GHz

1. The Second FNPRM/NOI requested comments on whether small antennas should be allowed in the 13 GHz TV BAS band. EIBASS supports allowing use of antennas meeting the proposed Category B2 antenna standard. The adoption of a Category B2 antenna specification, in addition to the current Category A and Category B criteria, would be a reasonable trade off between spectrum efficiency and allowing smaller diameter microwave antennas that can meet the Category B2 criteria. The current Category B antenna criteria generally requires parabolic dishes of at least 4-feet diameter, whereas creation of a Category B2 criteria would allow use of 2-foot diameter dishes. Where a link using a Category B2 antenna can successfully frequency coordinate, EIBASS believes that the preclusion impact to future links will be minimal.

## II. Close the "Maximum EIRP" Loophole

2. EIBASS supports the change suggested by Comsearch and the Fixed Wireless Communications Coalition (FWCC): Amend Sections 101.103 and 101.115(f) of the FCC rules to change the term from "maximum EIRP" to "authorized EIRP." Although EIBASS is not aware of any cases where the current wording has allowed abuse, EIBASS agrees with Comsearch and FWCC that the likely source for such abuse would be by newcomer parties

making unsubstantiated claims about the performance of physically small phased array microwave antennas.

3. EIBASS has repeatedly gone on record in this proceeding[1] that we have found no evidence that such antennas exist on a commercially available basis, and are capable of meeting the current FCC rules for Category A, or even Category B or B2, antenna performance.

## III. Definition of "Frequency Congested Area"

4. The Second NOI asks if the 1983 FCC list of frequency congested areas, in turn based on 1976 data, should be updated. First, EIBASS notes that these maps/lists of frequency congested areas were only for Fixed Service (FS) microwave stations[2], not for BAS microwave stations. EIBASS believes that while a thirty-year old list of frequency congested areas certainly needs updating, should the Commission do so it will probably not be long before that updated list is again obsolete. EIBASS submits that the Commission should adopt a benchmark that gets regularly updated by other entities, and thus spare the FCC of this burden. For BAS microwave spectrum, EIBASS suggests a simple top-100 TV market definition. TV market lists are regularly updated by the Nielsen Company, and almost exclusively use County (or Parish) boundaries, whose geographic definitions are widely available. Thus, there would be no ambiguity whether a particular microwave transmit site was inside, or outside, a particular TV market. Further, the Commission has often used the Nielsen list of TV markets for regulatory purposes. For example, see Section 76.55(e) of the FCC rules regarding cable television signal carriage, and the Commission's June 29, 2009, Public Notice, DA 09-1847[3], allowing applications for new digital LPTV or TV Translator stations specifying a transmitter site that is at least 121 km from the reference coordinates of the top-100 TV markets.

5. Use of an established, clear-cut criteria such as the boundaries of the top-100 TV markets would avoid the earlier difficulties encountered by the MM Docket 90-500 rulemaking (using a Standard Metropolitan Statistical Area (SMSA) as the benchmark) and the ET Docket 03-254

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1 See EIBASS October 25, 2010, comments, at Section VI, Paragraphs 20 through 28; EIBASS November 22, 2010, reply comments, at Section VI, Paragraphs 23 and 24; EIBASS October 25, 2011, reply comments to FNOI, at Section I, Paragraphs 2 through 9; EIBASS November 22, 2011, reply comments to WSI *ex parte* comments, at Section I, Paragraphs 2 through 7; and finally the EIBASS February 15, 2012, *ex parte* response to WSI *ex parte* filing.

2 Namely, 952—960 MHz FS stations; 1,850—1,990 MHz FS stations; 2,130—2,150 MHz/2,180—2,200 MHz FS stations; 6 GHz FS stations; and 12 GHz FS stations.

3 *Commencement of Rural, First-Come, First-Served Digital Licensing for Low Power Television and TV Translators Beginning August 25, 2009, and Commencement of Nationwide, First-Come, First-Served Digital Licensing for Low Power Television and TV Translator Services Beginning January 25, 2010.*

rulemaking (proposing "growth zones" based on the number of microwave paths per County/Parish). However, as pointed out in the March 18, 2004, reply comments of the Society of Broadcast Engineers, Inc. (SBE), there are 3,489 such boundaries in the United States, ranging in size from a mere 25 sq. km for Bristol County, RI, to 20,062 sq. km for San Bernardino County, CA; 16,617 sq. km for Coconino County, NM; and 18,147 sq. km for Nye County, NV. Indeed, the SBE ET 03-254 reply comments noted that each of these three western counties had more land area than nine States: Connecticut, Delaware, Hawaii, Maryland, Massachusetts, New Hampshire, New Jersey and Rhode Island. Thus, the number of microwave paths per county or parish is a meaningless benchmark. While the number of microwave paths per sq. km in a particular county of parish might be a valid metric, it would be a more complex and burdensome parameter to calculate. Therefore EIBASS favors a straightforward and easy to check top-100 TV markets benchmark.

6. The need to finally define "frequency congested area" for BAS purposed (both Subpart E Aural BAS and Subpart F TV BAS), and to update the FS "frequency congested area" maps, is all the more important now that FS stations are allowed entry to the 7 and 13 GHz TV BAS bands, and now that Aural BAS stations have access to the 940 and 960 MHz FS bands. However, EIBASS submits that both BAS and FS stations should be granted "grandfather" rights, meaning that existing stations that are in an area newly defined as "frequency congested" not be required to upgrade their transmitting antenna unless making a major-change modification that involves a new transmitting site. Thus, transmitting site coordinate refinements of up to ±5 seconds in latitude or longitude would not trigger a need for a Category A antenna, nor would a change in emission designator from analog to digital.

7. EIBASS notes that there are provisions in the current Category A/Category B antenna rules allowing for waivers[4], where it can be demonstrated that a Category A, or even Category B, antenna cannot be physically accommodated. For example, the largest sized dish that would fit between the outside trunions of the former World Trade Center buildings was four feet, and thus TV BAS microwave links originating from that site were granted rule waivers.

8. Finally, EIBASS notes that on September 14, 2005, SBE filed a Petition for Rulemaking proposing that minimum antenna standards for 950 MHz Part 74 Subpart E Aural BAS stations be adopted. That SBE filing proposed applying the antenna standards for 940/960 MHz FS stations. On October 21, 2009, EIBASS sent a letter to the Commission, asking about the status

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4 Section 74.641(c).

of the SBE petition. No response was received, and as far as EIBASS is aware the Commission has still not taken action on the SBE petition, one way or the other. A copy of the EIBASS letter, and the original SBE petition, are attached as Figure 1 to this filing. EIBASS submits that it is high time for the Commission to finally adopt minimum antenna standards for 950 MHz Aural BAS stations.

## IV. Summary

9. The Commission should allow Category B2 antennas at 13 GHz. The "maximum EIRP" vs. "authorized EIRP" loophole in the Part 101 rules should be preemptively closed before mischief gets done. Most definitely the useless, thirty-year old FCC maps of frequency-congested microwave bands and areas need to be updated, by one means or another. The definition of "frequency congested" needs to address fixed-link BAS stations, as well. Finally, the Commission should adopt minimum antenna standards for 950 MHz Aural BAS stations, as proposed by SBE seven years ago.

## V. List of Figures

10. The following figures or exhibits have been prepared as a part of these WT Docket 10-153 Second NPRM/Second NOI comments:

1. Copy of October 21, 2009, EIBASS query letter, and copy of SBE September 14, 2005, Petition for Rulemaking to adopt minimum antenna standards for 950 MHz Aural BAS stations.

Respectfully submitted,

/s/ Dane E. Ericksen, P.E., CSRTE, 8-VSB, CBNT
EIBASS Co-Chair
Hammett & Edison, Inc., Consulting Engineers
Sonoma, CA

/s/ Richard A. Rudman, CPBE
EIBASS Co-Chair
Remote Possibilities
Santa Paula, CA

October 5, 2012

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## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

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**Broadcast Auxiliary Services Spectrum**

**EIBASS Co-Chairs**

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**BY FIRST CLASS MAIL**

October 21, 2009

Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Dear Ms. Dortch:

Engineers for the Integrity of Broadcast Auxiliary Service Spectrum (EIBASS) is sending this query letter regarding a September 14, 2005, Petition for Rulemaking filed by the Society of Broadcast Engineers, Inc. (SBE). To the best of our knowledge, no action has ever been taken in response to that Petition for Rulemaking; that is, no RM number has been assigned, nor has a Notice of Proposed Rulemaking (NPRM) been issued. For reference, a copy of that 2005 SBE filing is attached.

EIBASS believes that the SBE Petition for Rulemaking, proposing to adopt minimum antenna standards for Part 74, Subpart E, Aural Broadcast Auxiliary Services (BAS) stations, merits Commission action. If the Commission issues an NPRM, or even a public notice assigning an RM number, EIBASS would certainly submit its comments in support.

Sincerely,

***/s/ Dane E. Ericksen*** ***/s/ Richard A. Rudman***

Dane E. Ericksen Richard A. Rudman

Enclosure

cc: Mr. Roy Stewart by e-mail: roy.stewart@fcc.gov
Mr. John Wong by e-mail: john.wong@fcc.gov
Mr. Steve Buenzow by e-mail: stephen.buenzow@fcc.gov

## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED
SEP 14 2005
Federal Communications Commission
Office of Secretary

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|---|---|---|
| In the Matter of | ) | |
| | ) | |
| Amendment of Part 74 of the FCC Rules | ) | RM No. _____ |
| To Adopt Minimum Antenna Performance Standards | ) | |
| for 950 MHz Subpart E Aural BAS Stations | ) | |
| | ) | |

To: The Commission

### Petition for Rulemaking

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members world wide, hereby respectfully submits this Petition for Rule Making to adopt minimum antenna performance standards for 944.0–952.0 MHz Part 74 Subpart E Aural Broadcast Auxiliary Service (BAS) stations.

### I. Reason for Petition

1. The FCC Rules currently do not define minimum antenna performance standards for 950-MHz Aural BAS stations. Although Section 74.536(b) specifies Category A and Category B transmitting antenna performance standards for 18 GHz Aural BAS stations, 950 MHz Aural BAS stations are required to comply with the less restrictive Section 74.536(a) requirement in that the transmitting antenna be "directional," and "utilize the minimum beam width necessary, consistent with good engineering practice." As shown by the graphs in the attached Figure 1, the number of 950 MHz Aural BAS stations has increased five-fold in the last twenty years. Given the pervasive frequency congestion in the 950 MHz Aural BAS band that exists in many radio station markets, and the fact that 950 MHz Aural BAS stations are now subject to Section 101.103(d) prior coordination notice (PCN) frequency coordination protocols[1], SBE believes that it is now appropriate for the Commission to adopt minimum antenna performance standards for such stations.

[1] ET Docket 01-75, effective October 16, 2003.

## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

**SBE Petition for Rule Making: Minimum Antenna Performance Standards for 950 MHz Aural BAS Stations**

### II. Discussion

2. Spectrum congestion in the 950 MHz Aural BAS band has increased in the last decade, and, in fact, it has increased in all of the BAS bands. To help minimize congestion, increase spectrum efficiency, and promote frequency re-use, the Commission has established comprehensive minimum antenna performance standards for 18 GHz fixed-link Aural BAS stations, as well as for 2, 2.5, 7, 13 and 18 GHz TV BAS fixed-link stations. SBE also notes that Private Operation Fixed Service (POFS) stations operating in the neighboring bands of 941.5–944 MHz and 952–960 MHz are subject to minimum antenna performance standards.

3. SBE has learned that Wireless Telecommunications Bureau (WTB) staff have begun interpreting Section 74.536(a) of the Aural BAS rules as not allowing a 950 MHz Aural BAS transmitting antenna with a half-power beam width (HPBW) of greater than 24°. The realization that a *de facto* minimum requirement exists within WTB suggests that the Commission understands that a problem exists, and is already taking informal corrective steps toward limiting the frequency congestion.

4. SBE believes that a better approach would be for the Commission to initiate a rulemaking, pursuant to the Administrative Procedures Act, to adopt minimum antenna performance standards for 950 MHz Aural BAS stations. Accordingly, SBE is submitting this petition, requesting the Commission to recognize the impact of growing congestion in the 950 MHz Aural BAS band, and the current need to apply minimum antenna performance standards similar to those enforced in adjacent bands, and generally conforming to the standards set for all fixed-link stations that require frequency coordination.

### III. Proposal

5. SBE proposes that the minimum antenna performance standards of Section 101.115(b) for 941.5–944 MHz POFS links be made applicable to 944.0–952.0 MHz Aural BAS stations. However, SBE proposes that these specifications only apply to the authorized polarization, so as to accommodate truncated-reflector antennas, commonly used by broadcasters in this band.[2] Furthermore, SBE proposes that the minimum antenna performance standards apply to both transmitting and receiving antennas, as an overly broad receiving antenna can be just as preclusionary and spectrum inefficient as an overly broad transmitting antenna.

[2] Some truncated-reflector antennas meet the Part 101 Category A or Category B antenna performance standards in one polarization, but not the other; so long as a truncated-reflector antenna is being proposed for a polarization that meets the pertinent antenna category, its use should be allowed.

**SBE Petition for Rule Making: Minimum Antenna Performance Standards for 950 MHz Aural BAS Stations**

6. So as to minimize any hardship to existing licensees, SBE proposes that minimum antenna performance standards only apply to existing stations after a ten-year grandfather period,[3] or if a major-change modification to the existing station is made, whichever occurs first. However, in the event that a newcomer station demonstrates that upgrading the existing transmitting and/or receiving antenna with a compliant antenna[4] would allow a newcomer station to frequency coordinate a new link, then the existing station would be required to implement the upgrade, at its own expense.

7. To allow for special situations where physical (*i.e.*, structural), local zoning, or other restrictions do not allow the installation of an antenna large enough to meet Category A or Category B requirements (as appropriate), SBE proposes the same waiver language that exists in Section 74.643(d) of the TV BAS rules be applied; namely

> As an exception to the provisions of paragraph (a) of this section, the Commission may approve antenna systems not conforming to the technical standards where a persuasive show is made that:
>
> (1) Indicates in detail why an antenna system complying with the requirements of paragraph (a) of this section cannot be installed.

Under this approach, the burden of documenting why a Category A or Category B (as appropriate) transmitting or receiving antenna can't be used falls on the applicant requesting a sub-standard antenna, but leaves open the possibility of a non-Category A or non-Category B (as appropriate) antenna where the proper justification can be made. This exception provision would also apply if a newcomer station requests an existing licensee to upgrade its transmitting or receiving antenna; if the existing licensee can demonstrate that such an upgrade would not be possible due to physical, local zoning, or other restrictions, then the existing licensee would not be required to implement the upgrade, even if the newcomer station is willing to pay all reasonable and prudent costs associated with the antenna upgrade.

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[3] As was done for the imposition of minimum antenna performance standards for Part 74 Subpart F TV BAS fixed link stations, in General Docket 82-334.

[4] A compliant antenna is defined as an antenna meeting Category A performance standards in frequency congested areas, or meeting Category B performance standards in non-frequency congested areas, using the same "frequency congested" area criteria given in Sections 74.641(b)(1 and 2) of the TV BAS Rules.

## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

**SBE Petition for Rule Making: Minimum Antenna Performance Standards for 950 MHz Aural BAS Stations**

### IV. Summary

8. With the advent of formalized PCN protocols for 950 MHz Aural BAS stations and the increased frequency congestion of the 950 MHz Aural BAS band in many radio markets, SBE believes that it is time for the Commission to finally harmonize the Part 74 Subpart E 950 MHz Aural BAS rules with those applying to 940 and 960 MHz POFS stations, and to fixed-link TV BAS stations, and adopt minimum antenna performance standards for 950 MHz Aural BAS stations.

### List of Figures

9. The following figures or exhibits have been prepared as a part of this Petition for Rulemaking:

1. Graphs showing the growth of 950 MHz Aural BAS stations.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

Ray Benedict, CPBE
SBE President

Dane E. Ericksen, P.E., CSRTE, CBNT
Chairman, SBE FCC Liaison Committee

Christopher D. Imlay, Esq.
General Counsel

September 14, 2005

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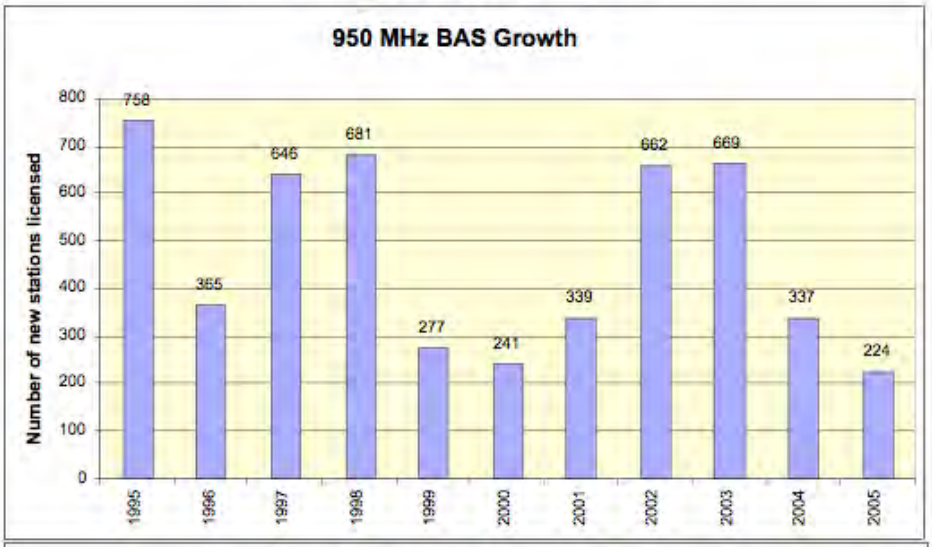
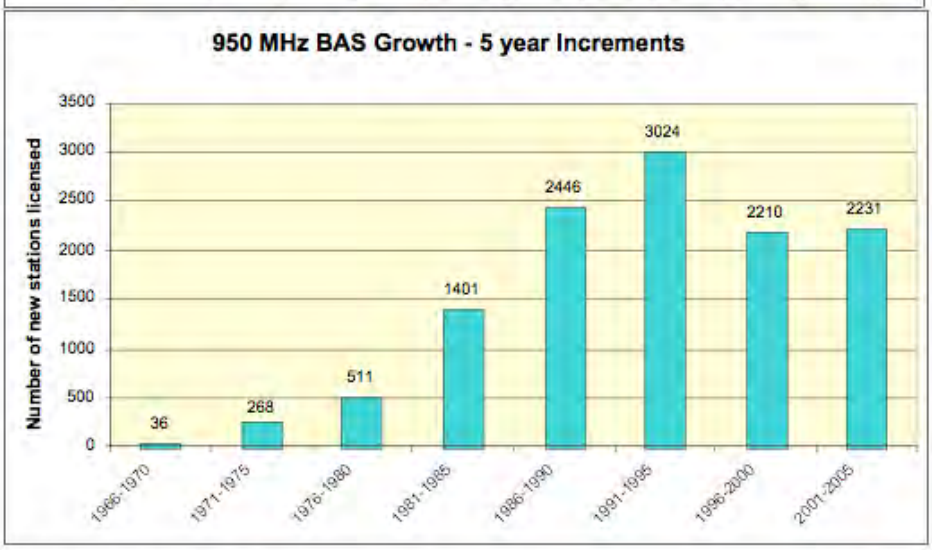
## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

**SBE Petition for Rulemaking: Minimum Antenna Performance Standards for 950 MHz Aural BAS Stations**

**Number of 950 MHz Aural BAS Stations**



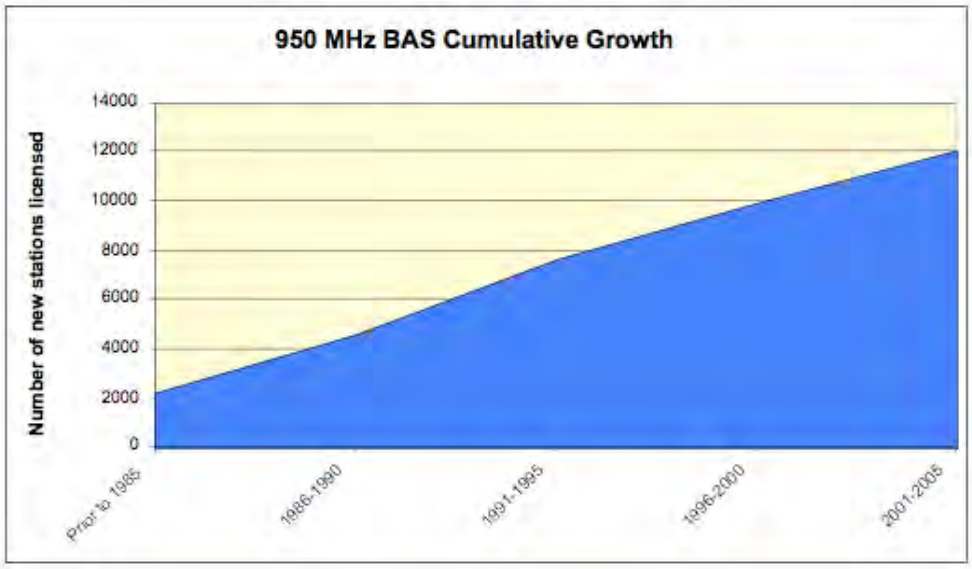

SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

050528.5
Figure 1A

## Copy of 2009 EIBASS Query Letter and Copy of 2005 SBE Petition for Minimum Antenna Standards for 950 MHz Aural BAS Stations

**SBE Petition for Rulemaking: Minimum Antenna Performance Standards for 950 MHz Aural BAS Stations**

**Number of 950 MHz Aural BAS Stations**




All charts based on data obtained from the ULS.

SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

050528.5
Figure 1B